UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

November 19, 2013

Linda Behnken
Alaska Longline Fishermen's Association
834 Lincoln Street
Sitka, Alaska 99835

Dear Ms. Behnken:

This letter provides comments from the Alaska Fisheries Science Center (AFSC) and the Alaska Region concerning the revised Exempted Fishing Permit (EFP) application for "Integrating Electronic Monitoring of Fixed Gear Vessels with the North Pacific Research Program" you submitted to us on behalf of the Alaska Longline Fishermen's Association (ALFA) on October 18, 2013, and supplemented on November 6, 2013. This is the second letter we have sent you on your EFP application. The first letter addressed administrative issues on the initial EFP application and was dated October 23, 2013.

Overall, there are a number of scientific and logistical questions that we believe would need to be addressed before the proposed EFP could be approved. However, we have attempted to provide constructive suggestions for a revised EFP that we believe could lead to an effective and helpful step forward in the implementation of electronic monitoring. If you have specific questions on our review, our staff are available to assist you in the development of a revised EFP. Comments from the AFSC on the EFP design are provided in Enclosure 1 to this letter. Comments from the Alaska Region are addressed in Enclosure 2 to this letter. As you will note in the comments from the Alaska Region, we provided additional detail on suggestions for potential alternative electronic monitoring experiments that could be conducted under a revised EFP.

Please contact me if you have questions or would like additional feedback from our staff to help you develop a revised EFP.

Sincerely,

James W. Balsiger, Ph.D.
Administrator, Alaska Region

Enclosures

Enclosure 1

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Alaska Fisheries Science Center
7600 Sand Point Way N.E.
Bldg. 4, F/AKC
Seattle, Washington 98115-0070

November 18, 2013

MEMORANDUM FOR: James W. Balsiger, Ph.D.
Administrator, Alaska Region

FROM: Douglas P. DeMaster, Ph.D.
Science and Research Director

We have reviewed the application by the Alaska Longline Fishermen's Association for an exempted fishing permit in response to your request dated 11/6/2013. Our review of the permit application highlights our concerns with the proposed experimental design and sampling protocols that we believe need to be addressed in order to best move us forward with electronic monitoring research and development in Alaska. We have not provided a set of detailed comments herein but could do so on request.

Attachment

Alaska Fisheries Science Center review of the October 18, 2013, exempted fishing permit application submitted to the Alaska Regional Office of the National Marine Fisheries Service by the Alaska Longline Fishermen's Association

This document presents a scientific review conducted by the Alaska Fisheries Science Center (AFSC) of the Exempted Fishing Permit (EFP) application titled "Integrating Electronic Monitoring of Fixed Gear Vessels with the North Pacific Research Program" submitted to the National Marine Fisheries Service's (NMFS) Alaska Regional Office by the Alaska Longline Fishermen's Association (ALFA).

Overview

Exempted Fishing Permits are an excellent tool used to address conservation and management needs in North Pacific fisheries. They have been used both by industry to move forward on projects where NMFS has not been able to make progress and they have been used in collaborative work between industry, academia, and NMFS.

The abovementioned EFP application references an electronic monitoring (EM) workgroup and addresses both the scheduling of meetings and tasking of this workgroup. We note that the EM workgroup is a North Pacific Fishery Management Council body, so the Council would need to address the workgroup's role, tasking, and scheduling, but outlining a Council workgroup's role and schedule is likely outside the scope of the EFP.

The objectives of this EFP should complement existing fishery data collections including observer data and fishery logbooks. The AFSC notes that sablefish logbook catch per unit effort (CPUE) is used in the stock assessment at the request of industry. The EFP would be strengthened if it utilized the logbook framework currently in place for the management of sablefish to help develop electronic logbooks. Similarly, effort data are an important component of observer data for computation of CPUE indices used in the stock assessment process. Effort information (e.g., hook spacing, number of hooks, gear performance, etc.) needs to be captured by EM to be useful in CPUE calculations. Additionally, results of this EFP can only be compared to data collected by human observers if certain standards are met to ensure data compatibility. When detailed data collection protocols are developed, they should be discussed with NMFS personnel.

The EFP should clearly specify which management needs will be addressed. Previous comments provided by the AFSC outline these objectives and the EFP applicants should reference these. Developing standards is important; however, we believe that at a minimum the overall goal should be to characterize catch and bycatch in the halibut and sablefish fisheries. Developing operational procedures and outlining operator responsibilities should be a component of this EFP.

Finally, it is not clear who would have access to the data collected as part of the EFP. This should be clarified.

General comments

The EFP application notes that its goal is to develop EM in support of management and conservation needs, and goes on to state that using EM is less problematic than using fishery observers. This perspective that EM is less problematic is based on an at-sea logistics rather than a quality of data provision as seen from a management perspective.

The EFP's applicants should include or commit to a statistical analysis of their sampling design and associated statistics in order to evaluate whether the proposed sample size constitutes "over-" or "under-" sampling from the perspective of statistical power. Sufficient literature exists for a detailed proposal to be developed prior to sampling. A power analysis or simulation based on previously collected catch compositions would improve the proposal. Scientific evaluation of the EFP objectives will be more constructive if power analyses are provided or committed to regarding the ability to meet vessel selection sampling goals and precision surrounding catch estimation confidence.

While the EFP envisions a length of 5 years, it makes more sense from a science perspective to see annual EFP applications that build on previous results because the plan may change considerably given results from preceding years.

This EFP application proposes to subsume the study already underway by NMFS but restricts the NMFS pilot program to the Homer and Kodiak regions. NMFS has not agreed to this, and there are legal issues given that a contract has been established and work is currently underway. Furthermore, it is uncertain how the goals of NMFS' ongoing EM work may be affected by this proposal.

The EFP notes that species will be identified to lowest taxonomic level using EM images such that unidentified fish will be grouped. Since nearly all commercial species are managed under the Bering Sea-Aleutian Islands (BSAI) and the Gulf of Alaska (GOA) Fishery Management Plans (FMP) as individual species, estimation of discard by species groupings will not meet current management needs. For example, no mention is made of species other than rockfish as a hard-to-identify species and complex. Other "complex" groupings that may require 100% retention may include arrowtooth flounder, Greenland turbot/Kamchatka flounder and multiple species of skates.

The EFP applicants report that "At least one trip from each vessel will be sampled for dockside rockfish identification and compared with 100% video review for this same trip". The EFP applicants should include or commit to an evaluation of the sample size needed to ensure that a sufficient sample size is collected to meet study objective(s). Concerns regarding bias in the various sampling regimes being proposed should be addressed by the EFP applicants.

The EFP applicants report that survey data from NMFS will be used to determine species average weights. Species-specific weight is highly variable over time and regionally. Its use may therefore lead to inappropriate expansion of catch. The applicants should consider other ways to better inform species average weight for sampled hauls. The AFSC recommends that weights be used from complementary data such as from an observed longline fishery rather than from survey data because of selectivity differences between survey catch and the fishery catch. An evaluation of whether average weights are appropriate for estimating discards should be considered.

Applicants should carefully evaluate the best metrics to be used based on prior EM research or use this EFP to test alternative methodologies. The EFP applicants suggest that haul sub-sampling rates for video review will be 10%, 30%, and 50% of the total haul time which will then be compared against a census to evaluate cost-effectiveness. The EFP's research coordinators plan to randomly select 10% of the segments from each haul that was 100% reviewed for rockfish identification to be used for species identification and catch estimations at each of the sub-sampling rates. The EFP applicants should evaluate if alternative sampling regimes might be less biased. Other options exist, such as hook count or number of skates hauled (see observer sampling manual). Our recommendation would be to test and evaluate several sampling frames during the first year of study to help determine the best sampling frame method or to cite previous work that has haul time as optimal.

The EFP application should be revised regarding the statement that halibut regulations require that all vessels must retain any incidentally harvested seabirds. Further, if there is agreement to retain seabirds, a U.S. Fish and Wildlife Service (USFWS) salvage or scientific collection permit is required. This EFP has no direct involvement with the AFSC and is outside the bounds of our existing salvage permit. The applicants will need to submit a request to the USFWS Region 7 permit office (Anchorage) and describe what it will do with the seabird carcasses after they are used for the study. Note also that a salvage or scientific collection permit does not cover ESA-listed species. The EFP applicants should work directly with the USFWS Region 7 Ecological Services Division to determine what to do should a short-tailed albatross be taken or occur near a vessel engaged under the EFP.

Many of the uncertainties surrounding EM's ability to be successful in catch estimation are inherent to the hardware and in camera placement and performance. There are numerous significant video quality issues that need to be resolved prior to conducting an expansive and costly study aboard commercial vessels. Other components of this EFP can also be tested prior to multi-vessel deployments and should be evaluated on an individual basis to see if a step-wise approach is warranted to achieve the EFP objectives.

Enclosure 2

Comments from Alaska Region

Alaska Region staff conducted a thorough technical review of the revised November 6, 2013 EFP application that is available upon request. Rather than detail the technical aspects of that review, we propose that you contact staff after reviewing and considering the proposed revisions to the EFP provided in this attachment.

1. Use of Observer Fees for EFP funding

The proposed FY14 budget for the EFP is $1,088,468. On page 28, the application states that "the annual revenue stream afforded by the observer fees is essential to this project,..." We interpret this statement to mean that ALFA proposes to use funds derived from fees collected under the current North Pacific Groundfish and Halibut Observer Program to fund the EFP. For reasons described below, observer fees may not be used to fund your EFP.

Observer fees are collected by NMFS under the authority of section 313 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Section 313 authorizes the North Pacific Council to prepare and submit to the Secretary of Commerce a "fisheries research plan" that "establishes a system, or system [sic] of fees, ... to pay for the cost of implementing the plan." While section 313(b)(2)(A) authorizes the use of funds deposited into the North Pacific Fishery Observer Fund for "stationing observers, or electronic monitoring systems, on board fishing vessels...," section 313(b)(2)(H) conditions their use by stating that "fees collected will only be used for implementing the plan established under this section."

The North Pacific Fishery Management Council (Council) developed its fisheries research plan under Amendment 86 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area and Amendment 76 to the Fishery Management Plan for Groundfish of the Gulf of Alaska (Amendments 86/76). Amendments 86/76 were approved by NMFS on behalf of the Secretary of Commerce on June 7, 2012. Per section 313(c), NMFS implemented the Council's fishery research plan through a final rule published in the *Federal Register* on November 21, 2012. Under this fisheries research plan, observer fees may be used only for the deployment of human observers through a contract with an observer provider following an annual observer deployment plan that is developed by NMFS and reviewed by the Council. The final rule also explains that the Council explicitly chose to not include electronic monitoring in the alternatives considered under Amendments 86/76 (see response to comment 69 on 77 FR 70080). Furthermore, the fisheries research plan does not include any provisions that allow or direct the use of observer fees to support EFPs. Therefore, the Council's current fisheries research plan does not provide NMFS the authority to disburse funds in the North Pacific Fishery Observer Fund to ALFA for activities conducted under this EFP.

Any use of observer fees for purposes other than deployment of observers under Amendments 86/76, including for electronic monitoring in general or for your EFP in particular, would require the Council to change its fisheries research plan by submitting fishery management plan (FMP) amendments to NMFS. If approved, NMFS would implement revisions to the Council's fisheries research plan through Federal regulations in accordance with section 313(c) of the MSA.

2. *Responsibilities for Participating EFP Vessels:*

We recommend several additional EFP requirements to help insure success of the project:

1) If a vessel is selected and agrees to carry Electronic Monitoring (EM), the EFP should establish that the vessel be made available in a specified port for EM installation or removal within a specified number of days as you determine reasonable.

2) A selected vessel should agree to maintain EM functioning equipment once the system is on board and report problems immediately to the your identified contact. You may wish to require the vessel operator report circumstances that kept EM from functioning. You may also wish to consider provisions if EM equipment is not adequately maintained.

3) The EFP application should require that all participating vessels remain in the specified port to allow for EM installation, maintenance, repair, data download, or removal.

4) Vessels participating in the EFP should agree to comply with the condition of the EFP. To ensure success of the EFP, we recommend that this agreement be in writing and that it include those on board the vessel who would be interacting with, or maintaining the EM equipment. This may include IFQ hired skippers, IFQ holders, other crew, vessel operators, and vessel owners.

5) We recommend that you provide a mechanism for regular review and reporting of the successes and challenges.

3. *Suggested Potential EFP Study Design Revisions for Consideration*

The participants you have identified in the proposed EFP have vast practical experience and an information base related to vessel characteristics and fleet attributes that must be considered in moving any future EM regulatory program forward. An EFP that focuses on this expertise will also minimize duplication of effort. To that end we have suggestions to assist in conducting a successful EFP.

Rather than focus on a random selection of vessels we would suggest a focus on identifying and developing solutions to the logistical issues of deploying EM. Solving these issues is necessary for the regulatory development of EM. To this end, we suggest selecting a variety of vessels based on operation characteristics, size, primary species harvested, and gear configurations. These selections could use vessels that are conditionally released by the observer program under current Council policy and vessels in the zero coverage category.

We would suggest a more limited duration EFP. The proposal below is for a 2-year EFP to limit the administrative burden on the applicant from an annual EFP submittal process. Given the need to review the information collected, and the likely insight that information will provide, we would support a limited initial duration for this initial EFP, with the option for additional future EFPs to be developed and approved that build on the information gathered during this initial phase. Under this proposed approach, information collected during the first year is necessary to evaluate sampling and guide additional sampling in the second year. As a starting point for the first year, we suggest obtaining at least 3 vessels within each industry-identified vessel category (see the categories in the Vessel Monitoring Plan section below) to perform the EM tests.

Below are seven recommended categories of experimentation for your review and consideration that we believe you and your participants would be well suited to answer, and that will need to be addressed to implement any effective EM program.

3.1. Fleet Logistics and Deployment:

Study question: What are the fleet-derived logistical methods that allow efficient transfer and deployment of EM video systems between ports and vessels throughout the year?

The EFP participants would use their knowledge of the fleet's activities and movements to evaluate the scope of logistical issues of getting EM on and off multiple vessels spread across Alaska throughout the course of a year. Understanding this issue will guide development of regulations and the feasibility of deploying EM under real sampling scenarios. Specific study items are 1) investigating lead times required for video installation; 2) issues with the logistics of deploying EM across a wide geographical area; 3) identifying what ports are feasible to provide technical and maintenance services; 4) identifying the costs to vessels not operating out of those ports to install and maintain video (e.g., costs to vessel operators if EM equipment fails and they have to return to port); 5) are "roaming" technical services available or feasible; 6) can EM cameras be effectively moved and deployed between vessels during short time periods and what are the limitations associated with those logistics (i.e., would the current 2-month selection period work?); and 7) identify the procedures and communication models that would help NMFS coordinate EM deployment in the future.

Phase I (year 1): The first year will provide descriptive information about volunteer vessels (e.g., number of vessels, operation types, size, where/when fished, species targeted, ports of landing), characterize logistical issues, and provide solutions to improve logistics in Phase II.

Phase II (year 2): The second year of the project will implement the recommended solutions from Phase I and provide a final report with recommendations on the seven study items described above.

3.2. Vessel Monitoring Plan (VMP) Development:

Study Question: The EFP applicant will explore the concept of a Vessel Monitoring Plan (VMP) that would provide an important step in designing the regulatory architecture required for specifying EM use on board vessels.

Developing EM regulations requires understanding, in detail, the physical limitations of placing EM systems on vessels. Some limitations are video system-specific, but others are dependent on the operational characteristics of vessels rather than technical specifications. For example, the VMP would evaluate where discard occurs, specification of discard area(s), potential camera configurations based on vessel configuration (e.g., a stern hauler with clip gear versus a vessel hauling gear from the side), placement of compliance monitoring cameras outside of the discard area, the types of special handling requirements for crew that are needed to optimize EM performance, and how the VMP components interact with the logistics of deploying and moving cameras among many vessels. The EFP applicant would propose different VMPs based on the different vessel categories being studied, have the vessels test these VMPs, and modify the VMPs accordingly.

- Discard and retained areas: Investigate the physical issues associated with obtaining discard information from video. The fleet is well-equipped to explore where video could be placed on a variety of vessel configurations to obtain discard information and compliance monitoring while minimizing impacts on participants. Performance indicators should be developed to show whether catch was identified as discarded, retained, or the disposition was uncertain. Species identification is not required at this stage; only information about whether an animal dropped off a hook or was retained is required (see compliance monitoring point below). The report would need to evaluate the feasibility of restricting discard locations, detail crew handling procedures, and whether additional equipment or procedures would enhance the ability for cameras to monitor discards and retained catch.
- Compliance monitoring: Are there situations where compliance monitoring is necessary to verify that a fish was not discarded outside of a camera frame? If necessary, identify key points on the vessel where cameras could be placed for compliance monitoring. For example, how does this vary between vessel operations and how could this be incorporated into the concept of a VMP?
- Monitor careful release methods for halibut: Identify location, resolution, frame rate, and number of cameras needed for monitoring approved careful release methods. Special handling procedures required to evaluate approved careful release methods should also be considered.
- Obtain hook/skate counts: Identify location, resolution, frame rate, and number of cameras needed to obtain skate and hook counts as compared to the electronic logbook.
- Seabird avoidance measures: Determine the configuration of cameras for effective monitoring of seabird avoidance measures.
- Marine mammal interactions: Determine the configuration of cameras for effective monitoring of marine mammal interactions, including effective identification and detection of marine mammals. Reporting whether all marine mammal interactions were detected will not be possible without an independent observer on board.

Phase I (year 1): Define vessel categories based on operation characteristics and develop VMPs for each category. Prior to installing EM on a vessel, the EFP applicant through their technicians or port coordinators would visit the vessel and develop a plan related to camera and other EM equipment placement, crew catch handling procedures, operator responsibilities, and additional equipment the vessel may need to meet the bulleted objectives described above. The EFP applicant then would provide the plan to the vessel operator. After the first trip, the EFP applicant would review the EM system to determine if the draft VMP was functioning as intended. Modifications to the VMP would be made and vessel would again test the VMP. This process would be repeated for each modification.

Phase II (year 2): Deploy VMPs identified in year 1 for vessel categories aboard different vessels in the same categories and review performance. Develop VMPs (using methodology described in year 1) for vessel categories not tested in year 1 (Pacific cod longline and pot vessels).

The final EFP report will describe the final VMPs for each vessel category and characterize the issues during Phase I and II needed to finalize the VMPs.

3.3. Deploy and use NMFS Supplied Electronic Logbook (ELB):

Study question: Are ELBs feasible and functional on small vessels (<58' length overall)?

Besides knowing whether is it is feasible and functional to have ELBs completed on small vessels, the ELB will provide useful information to an effort study (see below). Vessel operators would be required to complete effort information for each haul (time, location, number of hooks and skates set), and target catch information (species and weight) as well as rockfish by species information (species by number and weight). At the end of each trip, the vessel operator would either provide the logbook data to the port coordinator for transmission to NMFS or transmit the data themselves using an available internet connection. NMFS will provide the required software to the EFP applicant, along with installation instructions and data entry and transmission instructions. Each participating vessel would need a PC laptop computer with a Windows 7 operating system (a minimum software requirement).

Phase I (year 1): Deploy ELB on IFQ sablefish and halibut longline vessels. Compile results and provide suggestions for improvement.

Phase II (year 2): Deploy ELB on Pacific cod longline vessels and pot vessels. Compile results and provide suggestions for improvement.

3.4. Effort Data Collection Study:

Study Question: How well does reported effort in the ELB correspond with video data and what are effective sampling methods to obtain effort data from video?

On a per-haul basis, a panel study could be conducted to (1) determine the level of agreement between video and ELB, (2) whether time is an acceptable sub-sampling unit for measuring effort from EM, and (3) to investigate a range of sampling times that can be compared to a census of catch and ELB effort information. This study will require applicants to randomly select skates on a fishing trip across a representative section of vessel categories (as defined in study 3.2, phase I above). Each sampled skate will be matched with ELB information, a video census of the sampled skate, and estimates based on a sample of video review periods (e.g., a systematic random sample of time periods). These estimates can be compared to each other.

Data from the first year (or data within the first year) should be used to investigate whether sampling is adequate and where to make adjustments to ensure reasonable statistical power. This investigation should be done on different vessel categories as described in the VMP. In addition, the costs associated with each method should be evaluated, including the costs of decreasing or increasing sampling time periods (and number of skates or hauls selected).

Phase I (year 1): Collect video. Using data from Phase I, evaluate and adjust the experimental design to test in Phase II. AFSC staff should be consulted during this process.

Phase II (year 2): Test the adjusted experimental design as necessary and report findings in the final EFP report.

3.5. Rockfish Retention Study:

Study Question: Is full retention of all rockfish species with at-sea verification using video feasible?

Vessels would be required under the conditions of the EFP to retain all rockfish on board until delivery at the dock. At the time of delivery, port coordinators or plant personnel will speciate rockfish and record the species, weight, and other currently required fields on the fish ticket. Vessel will notify the video technician of any drop-offs or other at-sea discard of rockfish. The port coordinator will obtain from the vessel operator the haul number, approximate time, and location of the accidental drop off. This information can be compared to onboard video data and will be part of the Phase I and II reports. This also corresponds with the VMPs ability to detect these incidents.

3.6. Seabird Collection Feasibility Study:

Study Question: Is it feasible for vessel operators to bag, tag, and ship seabirds?

We would coordinate with you to provide the necessary support to receive any applicable permits, and the necessary shipping information and preparation methods for seabird specimens. The applicant's port coordinator would record the seabird information on a spreadsheet that could be referenced to the video. The final EFP report would detail how well this method worked and provide suggestions for improvement.

3.7. Participating Vessel Exit Questionnaire:

The EFP applicant would develop a captain/crew exit questionnaire that could be compiled and reported at the end of the EFP. The questionnaire would provide insight into how successful the deployment might have been for the vessel, and provide feedback improve EM operation. The questionnaire may include questions about the successes and challenges with: 1) maintaining EM equipment, 2) using the ELB, 3) retaining rockfish, 4) retaining seabirds and following salvage protocols, 5) following VMPs, and 6) the vessel's ability to carry out other aspects of the EFP (hook count study, returning to specified ports). This project would be a Year 1 and Year 2 effort. Results from these questionnaires would be used to refine the VMPs and instructions to vessels regarding operational requirements identified in the EFP.